

REMARKS

In this Amendment, claims 1, 7-15, 17, 18, 25-27, 36-40, 52, 58, 59, 62 and 63 are amended and claim 5 is canceled. By this Amendment, claims 1, 7-15, 17, 18, 25-27, 36-40, 52, 58, 59, 62 and 63 have been amended to merely clarify the recited subject matter without any intention of narrowing the scope of any of the claims. Applicants have amended the currently pending claims in order to expedite prosecution and do not, by this Amendment, intend to abandon subject matter of the claims as originally filed or later presented, and reserve the right to pursue such subject matter in a continuing application. Claims 1-4, 6-54, and 56-63 are pending in this patent application. Reconsideration of the rejection in view of the remarks below is requested.

With respect to the objections to the claims, claim 5 has been canceled and so, the objection to that duplicate claim is now moot. Applicants submit that claims 23 and 24 are not identical. Claim 23 recites, in part, "said entities in an organization are represented in a public key infrastructure directory" while claim 24 recites, in part, "at least one of said characteristics and said relationships is represented in a directory." While both claims recite a "directory", any similarity ends there and accordingly, applicants have not deleted either of claim 23 or claim 24. Claims 17 and 18 have been amended to correct the typographical errors gratefully noted by the Examiner. Finally, applicants acknowledge the claim numbering oversight with respect to missing claim 55. However, applicants do not propose to take any action with respect thereto and kindly request that the claims be renumbered upon allowance without taking into consideration missing claim 55.

The Office Action rejected claim 1 under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. More specifically, the Office Action provided *inter alia* that "since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass." Applicants submit that claim 1 clearly recites steps involved in the method "for control and maintenance of operational organizational structure." Particularly, the method of claim 1 comprises the steps of "electronically" "associating entities with cryptographic capabilities", "organizing entities within the organizational structure as roles", and "maintaining roles within the organizational

structure.” Accordingly, the rejection of claim 1 under 35 U.S.C. §112, second paragraph is traversed and applicants submit that claim 1 is allowable.

The Office Action further rejected claims 1-15 under 35 U.S.C. §101. Specifically, the Office Action provided that “the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process”, “the claimed invention is directed to non-statutory subject matter”, and “the claimed invention is ...inoperative and therefore lacks utility.”

As noted above, with respect to the rejection under 35 U.S.C. §112, second paragraph, claim 1 clearly recites steps involved in the method “for control and maintenance of operational organizational structure.” Particularly, the method of claim 1 comprises the steps of “electronically” “associating entities with cryptographic capabilities”, “organizing entities within the organizational structure as roles”, and “maintaining roles within the organizational structure.” Dependent claims 2-4 and 6-15 merely further define claim 1 and thus are patentable. Applicants submit that the cases In Ex parte Dunki, 153 USPQ 678 (Bd. App. 1967) and Clinical Products Ltd. v. Brenner, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966) are inapposite. Those cases involved the following basic claim forms: “The use of X as a Y” and “The use of X in the Y”. Applicants’ claim 1 is clearly not in either of those forms.

Further, applicants submit that claims 1-4 and 6-15 define patentable subject matter. Claim 1 is at least patentable as a “new and useful process” as provided in 35 U.S.C. §101, more specifically a patentable method for control and maintenance of an operational organization structure comprising electronically associating entities with cryptographic capabilities, organizing entities within the organizational structure as roles; and maintaining roles within the organizational structure. The Office Action has not identified how claims 1-4 and 6-15 do not fall within the subject matter of 35 U.S.C. §101, particularly the “new and useful process” subject matter of 35 U.S.C. §101.

Finally, applicants submit that claims 1-4 and 6-15 are operative and therefore have utility. The specification, including the claims, and drawings of this application clearly set forth the operation and utility of the claimed invention. The Office Action has not identified how claims 1-4 and 6-15 do not work and therefore lack utility.

Accordingly, for at least the above reasons, the rejection of claims 1-4 and 6-15 under 35 U.S.C. §101 is traversed and claims 1-4 and 6-15 are allowable.

The Office Action rejected claims 1-10, 13-39, 41-44, 47-57, 59 and 61-63 under 35 U.S.C. §102(e) as being unpatentable over Lampson et al., "Authentication in Distributed Systems: Theory and Practice", ACM Transactions on Computer Systems, Vol. 10, No. 4, Nov. 1992, pgs. 265-310. Applicants respectfully traverse the rejection because the teachings of Lampson et al. fail to disclose, teach or suggest all the features recited in combination in the rejected claims.

For example, the teachings of Lampson et al. fail to at least disclose, teach or suggest a "method for control and maintenance of an operational organizational structure," comprising "associating entities with cryptographic capabilities", "organizing entities within the organizational structure as roles", and "maintaining roles within the organizational structure" as recited in independent claim 1 and its dependent claims 1-4, 6-10, and 13-15.

Lampson et al. merely disclose a theory of authentication and a system that implements it. The theory is based on the notion of principal and "speaks for" relation between principals. The theory shows how to reason about a principal's authority by deducing the other principals that it can speak for. In particular, they describe a system that passes principals efficiently as arguments or results of remote procedure calls, and handles public and shared key encryption, name lookup in a large name space, groups of principals, program loading, delegation, access control and revocation. Lampson et al., abstract.

As noted in applicants' specification, cryptographic representation of an organization has typically been defined statically, for a given time. But, such representation has limits especially in organizations facing structural or dynamic changes. Thus, applicants' claimed invention relates to control and maintenance of an organizational or operational structure to solve, for example, management of dynamic organizations which often can face significant structural changes. Applicants submit that Lampson et al. fail to disclose, teach or suggest any type of method for control and maintenance of an operational organizational structure as recited in claim 1. Rather, Lampson et al. is directed to a security system, particularly an authentication system.

Further, and more specifically, applicants' submit that Lampson et al. fail to disclose, teach or suggest organizing entities within an organization structure as roles, entities which have associated cryptographic capabilities. While Lampson et al. disclose an authentication system that may be applied to an organization, Lampson et al. fail to disclose any method for

organizing entities with an organization as roles. The only roles Lampson et al. discuss are roles, for principals, that appear to be supplied to the authentication system of Lampson et al. See, e.g., p. 268 of Lampson et al. as cited by the Office Action. Lampson et al. provide no disclosure, suggestion or teaching regarding organizing entities within an organizational structure as roles as recited in claim 1.

Additionally, Lampson et al. fails to disclose, teach or suggest maintaining roles within the organizational structure. As noted above, while the authentication system of Lampson et al. may be applied to an organization, applicants submit there is no disclosure, suggestion, or teaching by Lampson et al. how their system or its operation can or does maintain roles within an organizational structure. Rather, the Lampson et al. system and its operation merely facilitates secure communication using principals as roles. See, e.g., p. 268 of Lampson et al..

Further, the teachings of Lampson et al. fail to at least disclose, teach or suggest a “system for control and maintenance of an operational structure” comprising “maintaining capabilities of entities”, “maintaining functions of entities”, “maintaining characteristics of entities”, “maintaining relationships of entities”, and “changing the maintained said entities said characteristics and said relationships” as recited in independent claim 16 and its dependent claims method 17-39, 41-44, and 47-51.

As similarly discussed above in respect of claim 1 and its dependent claims, applicants submit that Lampson et al. fail to disclose, teach or suggest any type of method for control and maintenance of an operational structure as recited in claim 16. Rather, Lampson et al. is directed to a security system, particularly an authentication system.

Further, Lampson et al. provides no disclosure regarding maintaining capabilities of entities, such as a role in an organization (see, e.g., claim 19), maintaining functions of entities, such as an operation by a functionary in an organization (see, e.g., claim 22), maintaining characteristics of entities, such as an entity’s size, threshold for a quorum, or visibility (see, e.g., page 21 of the specification) or maintaining relationships of entities. As discussed above in respect of claim 1, while the authentication system of Lampson et al. may be applied to an organization, applicants submit there is no disclosure, suggestion, or teaching by Lampson et al. how their system or its operation can or does maintain capabilities, functions, characteristics and relationships of entities within organizations as recited in claim

16. Rather, the Lampson et al. system and its operation merely facilitates secure communication.

Lampson et al. also fail to provide any disclosure, teaching or suggestion regarding changing the maintained said entities said characteristics and said relationships. While the Lampson et al. authentication system may be applied to an organization, all relevant data about such organization is merely supplied to and used by the authentication system of Lampson et al. There simply appears to be no disclosure, teaching or suggestion regarding changing maintained entities, characteristics and relationships within an organization. Applicants submit the discussions at pgs. 271-274 of Lampson et al. (as cited by the Office Action) regarding statements is inapposite. There, Lampson et al. set forth how they propose to handle statements in their system for the purposes of authentication. For example, they address how to handle circumstances where one principal makes a statement on behalf of another principal. There is no indication or suggestion of any sort that the statements referenced in Lampson et al. perform any type of changing maintained entities, characteristics and relationships within an organization. Lampson et al. merely discuss how to handle authentication of statements.

Finally, the teachings of Lampson et al. fail to at least disclose, teach or suggest a system comprising “a maintenance system by which said database and said cryptographic authorities are maintained in coordination and by authorized parties assuring the representation of said organization and said cryptographic capabilities are soundly associated as defined by the coordination directives” and “maintenance transactions acting within said maintenance system, maintaining a view representing an organization” as recited in independent claim 52 and its dependent claims 53-57, 59 and 61-63.

As discussed above, Lampson et al. disclose a security system. In an embodiment, the system of Lampson et al. may make use of a certification authority as is well known. With respect to such a certification authority, Lampson et al. disclose the traditional methods of key and certificate management (including issuance, revocation, etc.). See, e.g., Lampson et al., pgs. 283-285. However, Lampson et al. fail to disclose, teach or suggest a maintenance system by which the database, representing entities of an organization and their characteristics, roles and relationships, and the cryptographic authorities are maintained in coordination and by authorized parties assuring the representation of the organization. For

secure communication, the Lampson et al. system simply relies on, for example, checking the integrity (e.g., expiry) of the certificates themselves or checking certificate revocation lists but does not address, for example, the basic issue of the proper association of an entity to a cryptographic capability. Thus, applicants submit that Lampson et al., particularly at pg. 270, just don't discuss, teach or suggest a maintenance system by which the database, representing entities of an organization and their characteristics, roles and relationships, and the cryptographic authorities are maintained in coordination, more particularly by authorized parties representing the organization and such that the cryptographic capabilities are soundly associated as recited in claim 52.

Further, Lampson et al. do not disclose, teach or suggest maintenance transactions acting within said maintenance system, maintaining a view representing an organization as recited in claim 52. As discussed above, Lampson et al. do not disclose any sort of maintenance system. Moreover, Lampson et al. do not disclose maintaining any sort of view representing an organization. Page 270 of Lampson et al. merely discloses gathering of information and using algorithms to check whether to grant access. Applicants submit that there is just no indication that the gathering and checking corresponds to maintaining a view representing an organization.

Therefore, for at least the above reasons, Lampson et al. fails to disclose, suggest or teach all the features recited in claims 1-10, 13-39, 41-44, 47-57, 59 and 61-63 and thus are least patentable under 35 U.S.C. §102 and 35 U.S.C. §103. Thus, the rejection of claims 1-10, 13-39, 41-44, 47-57, 59 and 61-63 is traversed and claims 1-10, 13-39, 41-44, 47-57, 59 and 61-63 are allowable.

Furthermore, the Office Action rejected claims 11, 12, 40, 45-46, and 58 under 35 U.S.C. §103(a) as being obvious over Lampson et al. and rejected claim 60 under 35 U.S.C. §103(a) as being obvious over Lampson et al. in view of the Unified Modeling Language Version 1.0 (January 13, 1997) ("UML specification"). As applicants submit above that independent claims 1, 16, and 52 are novel and non-obvious in view of Lampson et al., applicants accordingly submit that claims 11, 12, 40, 45-46, 58 and 60, which respectively are directly or indirectly dependent from independent claims 1, 16 and 52, are therefore not obvious. Thus, for at least the above reasons, Lampson et al. fails to disclose, suggest or teach all the features recited in claims 11, 12, 40, 45-46, and 58 and Lampson et al. in combination

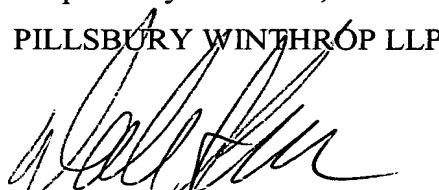
with the UML specification fails to disclose, suggest or teach all the features recited in claim 60. Thus, the rejection of claims 11, 12, 40, 45-46, 58 and 60 is traversed and claims 11, 12, 40, 45-46, 58 and 60 are allowable.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance. If questions relating to patentability remain, the examiner is invited to contact the undersigned to discuss them.

Should any fees be due, please charge them to our deposit account no. 03-3975, under our order no. 061047/0265649. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced deposit account.

Respectfully submitted,

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